CHESTERTON CONNECT™ V1.0 USER GUIDE

Equipment Monitoring Sensor – Vibration, Temperature, and Pressure

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Please read this user guide in its entirety before proceeding with the installation of the sensor. It is assumed that the user is familiar with the equipment and will take all the necessary safety precautions before attempting to install this sensor and its components. Caution must be taken to install the product using safe and best practice methods.

CHESTERTON
Global Solutions, Local Service.

About the Chesterton Connect™ v1.0 sensor

Chesterton Connect is a 24/7 conditioning monitoring system that enables users to monitor process and equipment operating conditions. Chesterton Connect makes it simple and easy to monitor:

- *3-axis vibration*
- *Surface temperature*
- *Process temperature*
- *Process pressure*

Chesterton Connect is aimed at equipment performance optimization, helping prioritize which equipment needs attention. The mobile app and unit's LED indicator alert the user of any vibration, temperature or pressure variations from the user programmed parameters. These alerts can help establish more efficient maintenance plans to help reduce unplanned downtime and asset failure.

About the Chesterton Connect™ app

Chesterton Connect communicates via Bluetooth with its companion mobile app to display alerts and measured data. The Chesterton Connect app is a user-friendly mobile application that allows the user to visualize the data collected from the sensor. In addition, the app allows the user to connect to multiple sensors providing a comprehensive view of a plant's equipment health. The app lets the user set equipment parameters limits. The data can be exported for analysis helping the user understand the equipment's operation and take preventative actions to extend productivity.

Software requirements (operating system):

- *Android version 6.0 and up*
- *Apple version 10 and up*
- *Bluetooth version 4.0 and up*

The Chesterton Connect app is available as a free download:

CHESTERTON

Download on the App Store

ANDROID APP ON Google Play

Warnings and cautions

- *Chesterton Connect contains a replaceable lithium thionyl chloride battery and a neodymium magnet. Follow local laws for proper treatment and disposal of this product or its components.*
- *To reduce the risk of fire or burns, do not crush, puncture, expose to temperatures above 85°C (185°F) or dispose of in fire.*
- *Chesterton Connect contains a very strong neodymium magnet. Use caution when handling unit to avoid injuries.*
- *Disable the product if it is damaged or operates incorrectly.*
- *Do not stick anything into the pressure/temperature 1/4" NPT port.*
- *Handle the unit using the supplied ESD protective caps until ready to install.*
- *Make sure product is used as specified and within its advertised operating limits.*
- *Do not bend cable beyond its bend radius.*
- *Do not allow the pressure/temperature sensor to come in contact with the magnet.*
- *Do not drop magnet against hard surfaces, including the pump.*
- *Do not drop the Chesterton Connect product. Dropping the product may affect its ability to function properly.*
- *Follow all nearby Personal Protective Equipment (PPE) and equipment safety requirements when installing, troubleshooting or removing the sensor and its components.*
- *If using the Pressure/Temperature (P/T) sensor, ensure the process fluid is compatible with the P/T sensor material.*

Specifications and limits

SOFTWARE FEATURES

- ***Security:*** *Encrypted setup and password protected operation*
- ***Personalization:*** *Configurable name and usage information*
- ***Data acquisition:*** *Monitoring mode for extended battery life (5-minute intervals) and high accuracy mode for troubleshooting (1 minute intervals)*
- ***Data storage:*** *Up to 30 days of rolling history*
- ***Alerts:*** *Configurable thresholds, alarms*
- ***Analytics:*** *Time plotted trends and analysis*
- ***Data export:*** *Email export of sensor data and alarms*

OPERATING PARAMETERS

- **Pressure sensor limit:** *-1 bar g – 68 bar g (-14.7 psig – 1000 psig)*
- **Temperature limit (body):** *-20°C – 85°C (-4°F – 185°F)*
- **Temperature limit (sensor):** *-20°C – 125°C (-4°F – 257°F)*
- **Vibration sensor:** *3-axis accelerometer ±16g*
- **Battery:** *3.6V lithium thionyl chloride battery (replaceable)*
- **Fitting:** *1/4" NPT 17-4 PH connection*
- **Mount:** *Magnetic mounting base (additional mounting options sold separately)*

CERTIFICATION

Model No.: 403700
Certifications: FCC, IC, CE, RoHS, IP66, NSF61, ACS

Complies with IMDA Standards DB106440

この装置は、クラスB機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。 VCCI — B

E304

R-R-AwC-403699C

Note: Product is not certified as intrinsically safe. Parameters are based on laboratory testing.

Statements

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation. No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment. This device has been designed and complies with the safety requirements for portable RF exposure in accordance with FCC rule part 2.1093 and KDB 447498 D01.

RSS Compliance Statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device. This device has been designed and complies with the safety requirement for RF exposure in accordance with RSS-102, issue 5 for portable conditions.

EN 61326-1:2013 Radiated Immunity: *Unit may experience temporary loss of function during interference.*

Country of Origin: Designed in the USA.
Manufactured in China.

Sensor details

COMPONENTS

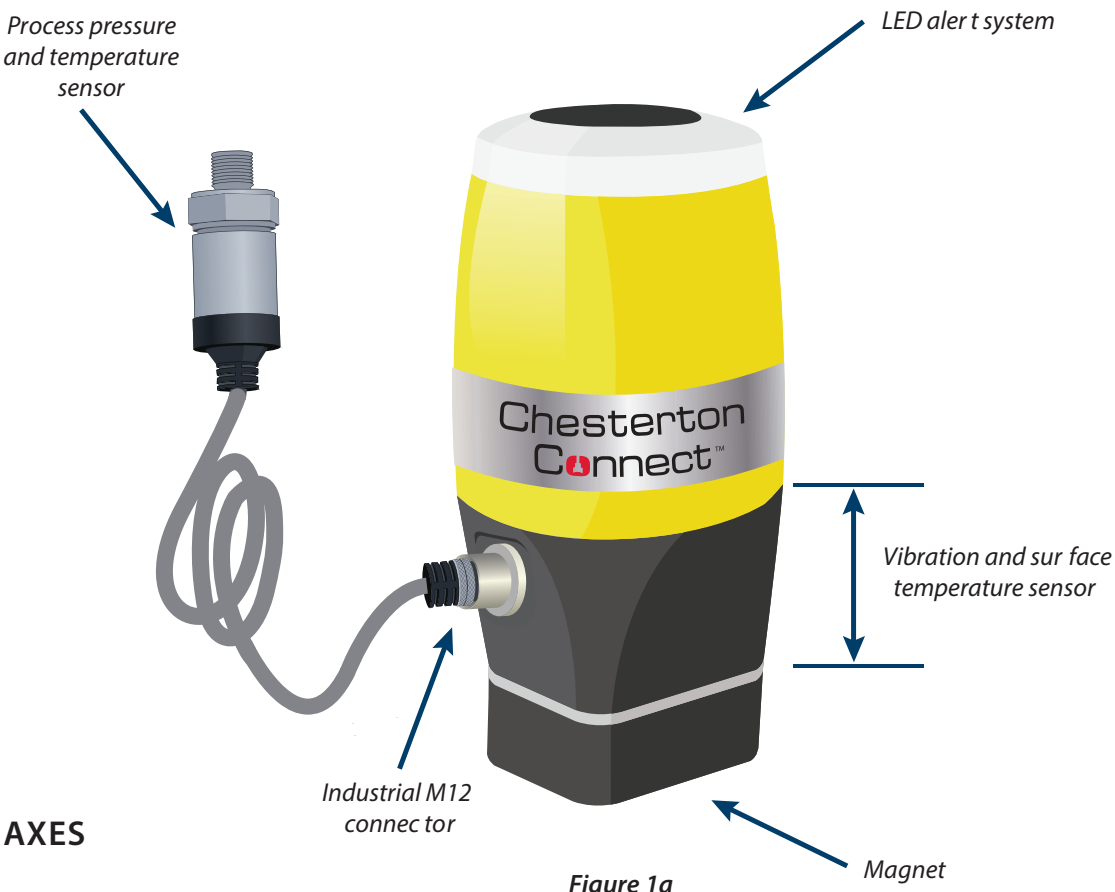


Figure 1a

VIBRATION AXES

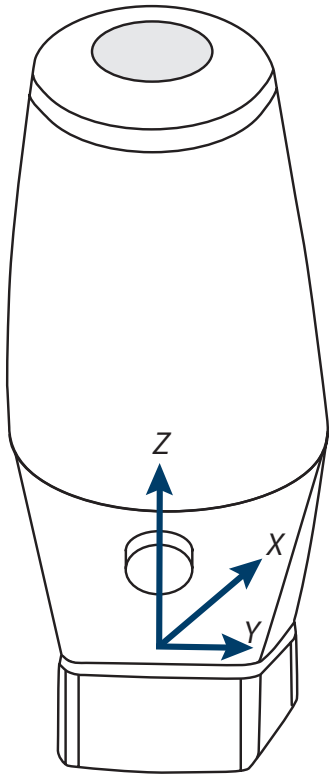


Figure 1b

LED ALERT SYSTEM PATTERN

LED color	Alarm type
	Powered on and operating correctly
	• Mobile app connection to the sensor • Data “SYNC” • Sensor “identify”
 15 second intervals	Measurement outside established limits set by user

Sensor details (continued)

DIMENSIONS

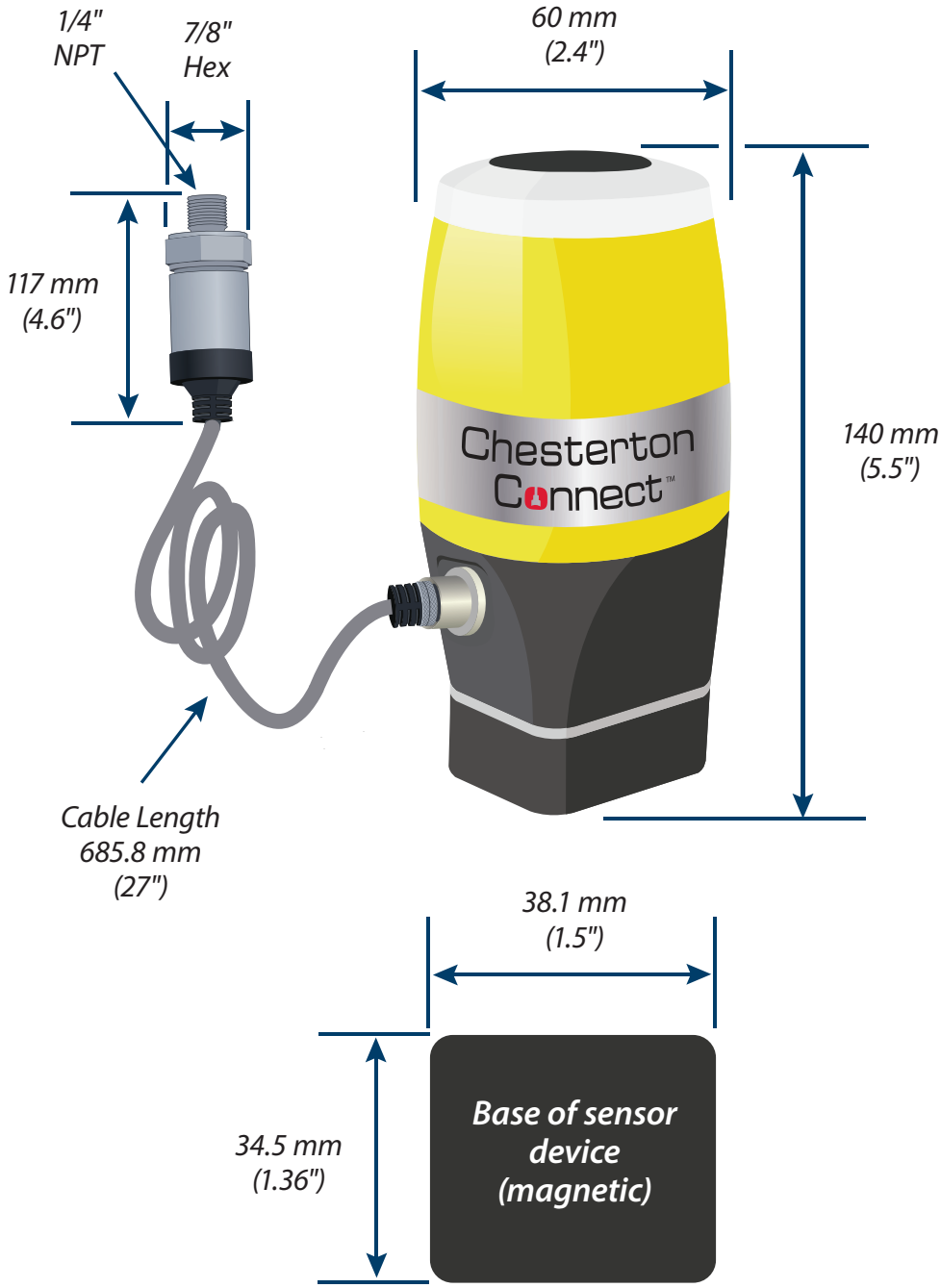
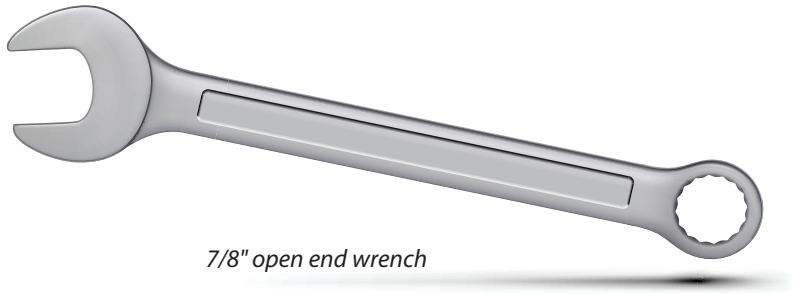


Figure 2

Installation instructions

TOOLS REQUIRED

Thread sealant tape



7/8" open end wrench

INSTALLATION

Warning: *the magnet is extremely strong, attach at a 45° angle then flatten to the surface. Do not "drop" the magnet to the pump.*

1. If using the Pressure/Temperature (P/T) sensor, *ensure the process fluid is compatible with the P/T sensor material*.* In addition, ensure process fluid temperature and pressure are within specified sensor limits (see page 3 for P/T sensor specifications limits). Follow the applicable lock out/tag out procedure for the equipment and make sure all PPE and safety precautions are followed.

   Apply thread sealant to the ¼" NPT connector. The ¼" NPT connector can be installed on the:

   - Pump suction
   - Pump discharge
   - Tee into double mechanical seal barrier or buffer fluid
   - Connected to extra flush port or tee into flush of pump or mechanical seal

Tighten the ¼" NPT 1.5 to 3 Turns From Finger Tight (T.F.F.T.) or approximately 25 ft-lb (see figure 3). *Note: Torque depends on different parameters such as sealing material, mating material, thread lubrication and pressure level.*

2. Attach the M12 pin connector to the base unit** **(this will activate the unit)**. Turn the connector nut until it is finger tight. The LED alert system will flash red, green, blue, and green (again) when activated.
3. The base of the unit is magnetic. Install the unit on the surface where vibration and surface temperature will be measured*** (see figure 4 for preferred sensor location on pumps). Take care in selecting a safe stationary location to mount the unit. Ensure the operating temperatures do not exceed the rated temperature of the body 85˚C (185˚F).

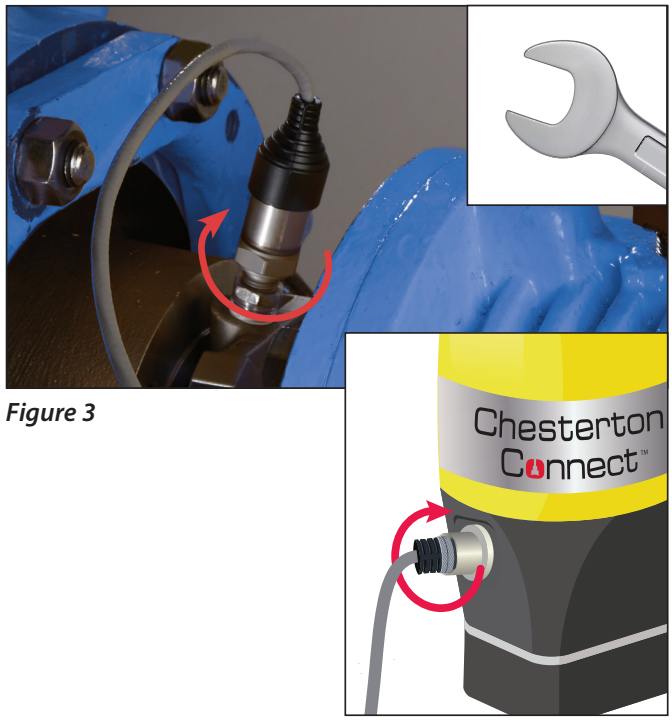


Figure 3

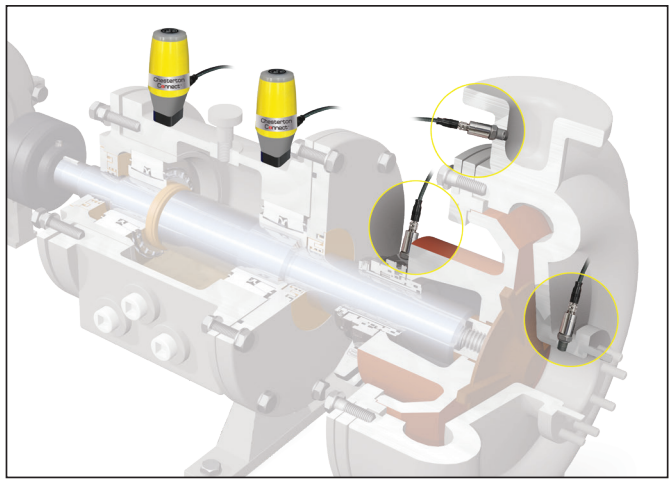


Figure 4

* Pressure port is a dead-ended component and must be inspected as part of the plant's maintenance plan to ensure no debris, slurry, or solidified process clogs the pressure port in the sensor head.

** An extension cable (sold separately) can be added to the P/T sensor. Only 1 (one) extension cable is recommended per sensor. For applications requiring additional extension cables please contact our customer support (see page 8)

***It is recommended in critical applications, additional tethers or attachment methods be used to ensure the telemetry head stays attached to the equipment.

Troubleshooting

BATTERY REPLACEMENT

WARNING!

Clean only with a damp cloth and replace battery only with Tekcell SB-D02 in a non-hazardous area.

App will indicate when the battery is low, to replace the battery:

1. Disconnect the M12 pin connector from the unit. **This will deactivate the unit**. Ensure P/T cable is safely secured.
2. Move the unit to a clean and dry location.
3. Once in a clean and dry location, unscrew top housing.
4. Remove the battery protection covers. Remove the old battery. Follow local laws for proper disposal of the old battery.
5. Insert the replacement battery positive side up (see figure 5). Replace only with Chesterton battery, item number 403683.
6. Re-attach the protection covers and the top housing until it is finger tight.
7. Re-attach the M12 pin connector to the base unit. This will reactivate the unit. Turn the connector nut until it is finger tight. The unit will flash red, green, blue and green (again) when activated.

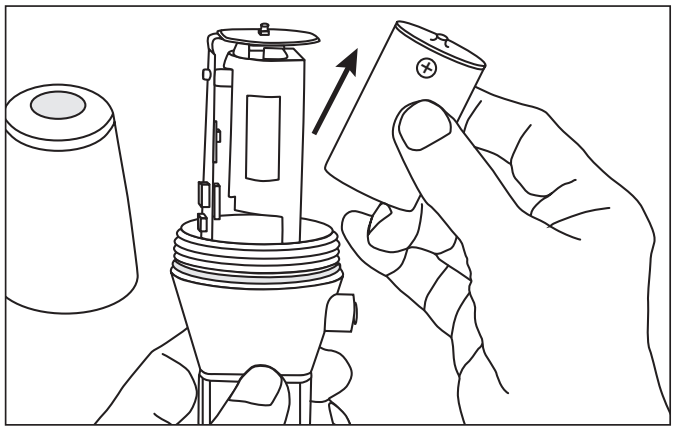


Figure 5

POWER CYCLING

Power cycling is a useful method to diagnose your sensor's operation. The unit's LED alert system will flash red, green, blue, and green (again) after performing a successful power cycle.

1. Disconnect the M12 pin connector from the unit. This will deactivate the unit. Ensure the P/T cable is safely secured.
2. Wait 5 seconds.
3. Reconnect the M12 pin connector to the unit. This will activate the unit. Turn the connector nut until it is finger tight.

Note: If the unit's LED alert system does not flash red, green, blue, and green (again) after performing a power cycling contact customer support (see page 8).

FACTORY RESETTING

*A factory reset **deletes all measured** data stored in the unit.*

To factory reset your sensor, the **M12 pin connector must stay connected**. Factory resetting shall only be performed in a clean and dry location. Avoid contact with any liquids or contaminants.

1. Once in a clean and dry location, unscrew top housing.
2. Press and hold the top “Reset” button down for 15 seconds (see figure 6). The LED will flash red and green.
3. After the LED flashes, release the “Reset” button.
4. Re-attach the top housing and turn until it is finger tight.

If you forget your password you can reset the sensor; however *you will lose all measured data stored* in the unit.

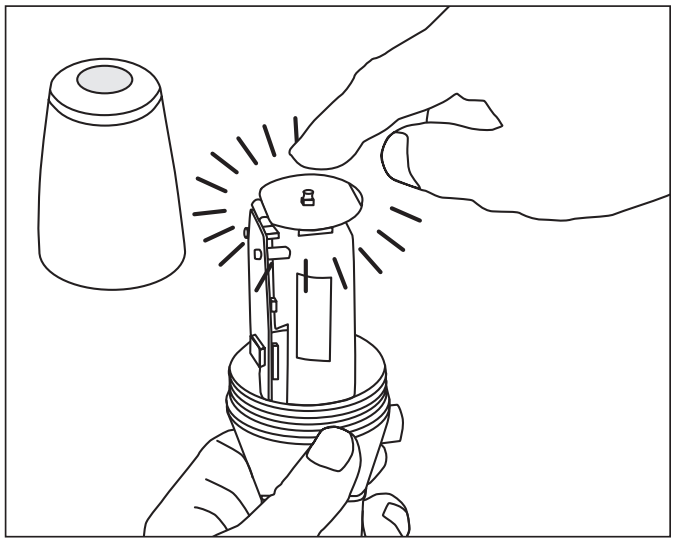


Figure 6

Limited warranty

Chesterton warrants, for a period of one year from the original date of shipment, that its Chesterton Connect™ sensor (the "Product") will be delivered free from defects in material and workmanship. Improper use of the Product, including but not limited to failure to follow instructions and warnings stated in the User Guide, accident, neglect, or abuse of the Product, or modifying the Product will void this warranty. THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES BY CHESTERTON, EXPRESS OR IMPLIED; TO THE FULLEST EXTENT PERMITTED BY LAW, ALL IMPLIED WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COMPLETENESS OR THAT THE PRODUCT WILL MEET CUSTOMER'S REQUIREMENTS, ARE HEREBY EXPRESSLY EXCLUDED TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW. CHESTERTON DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCT WILL BE UNINTERRUPTED, ERROR-FREE, OR HAVE IMPENETRABLE SECURITY. USE OF INFORMATION PROVIDED THROUGH THE APPLICATION IS SOLELY AT THE CUSTOMER'S OWN RISK. IN NO EVENT SHALL CHESTERTON BE LIABLE FOR ANY DECISION MADE OR ACTION TAKEN IN RELIANCE ON ANY INFORMATION MADE AVAILABLE BY, THROUGH, OR AS A RESULT OF THE PRODUCT.

If Customer notifies Chesterton of a potentially defective Product within the warranty period above, and that Product is determined by Chesterton to be defective, Chesterton will at its option either repair, replace or refund the purchase price of that Product. Labor is not included. THE ABOVE REMEDY SHALL BE THE SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY. CHESTERTON SHALL NOT BE LIABLE FOR ANY OTHER COSTS, LOSSES, EXPENSES, DAMAGES OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, ANY DAMAGES FOR LOSS OF BUSINESS OR LOSS OF PROFITS.

IN NO EVENT SHALL CHESTERTON BE LIABLE FOR ANY LOST PROFITS, LOSS OF DATA, OR BUSINESS INTERRUPTION, OR FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, EXEMPLARY, OR CONSEQUENTIAL OR SPECIAL DAMAGES OR LOST PROFITS HOWEVER CAUSED AND WHETHER IN CONTRACT, TORT OR UNDER ANY OTHER THEORY OF LIABILITY.

Privacy policy

To view Chesterton's privacy policy please visit:

https://chesterton.com/en-US/Pages/Privacy.aspx

For more information

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Product does not include a mobile device.

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